OC3140
HW/Lab 8   Analysis of Variance

The follow table lists yesterday temperature record at Carmel, Monterey, Seaside, and Salinas cities.

	Carmel	Monterey	Seaside	Salinas
6:00 AM	58	58	57.6	66.6
8:00 AM	59	58.8	58.5	67
10:00 AM	60	61	60	69
12:00 AM	61	61	61	70
2:00 PM	62	61.5	61.7	71
4:00 PM	62.5	62	62.5	71.5
6:00 PM	62	61.5	62	71
8:00 PM	61	61	61.5	70

1.   Determine if the mean temperatures at these four cities are the same (One-Way). A significance level of 5% is used

Fill the table as:

	Carmel	Monterey	Seaside	Salinas	Grand
6:00 AM	58	58	57.6	66.6	
8:00 AM	59	58.8	58.5	67	
10:00 AM	60	61	60	69	
12:00 AM	61	61	61	70	
2:00 PM	62	61.5	61.7	71	
4:00 PM	62.5	62	62.5	71.5	
6:00 PM	62	61.5	62	71	
8:00 PM	61	61	61.5	70	
sum					
mean					
Variance					

2.   If there are different mean temperatures, which two cities have different mean temperatures?

3.   Do Carmel, Monterey and Seaside cities have the same average temperature both in location and time (Two-factor)? A significance level of 5% is used

	Carmel	Monterey	Seaside	Total	Mean
6:00 AM	58	58	57.6		
8:00 AM	59	58.8	58.5		
10:00 AM	60	61	60		
12:00 AM	61	61	61		
2:00 PM	62	61.5	61.7		
4:00 PM	62.5	62	62.5		
6:00 PM	62	61.5	62		
8:00 PM	61	61	61.5		
Total					
mean					

The ANOVA table

Source	Sum of Squares	Degrees of freedom	Mean Squares	F ratio
Factor A (time)		$(I-1)=$		
Factor B (location)		$(J-1)=$		
Error		$(I-1)(J-1)=$		
Total		$IJ-1=$		